REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1, 2, 5-9, 11, 17, 18, 20, and 21 are pending in the present amendment. Claims 3, 4, 10, 12-16, and 19 are canceled, Claims 1, 2, 5, 6, 7, 8, 9, 11, 17, 18, and 20 are amended, and Claim 21 is added by the present response. Support for amendments and additions to the claims can be found in the disclosure as originally filed. Thus, no new matter is added.

In the outstanding Office Action, Claims 1, 2, 7, 11, 13, 14, 17, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fukushima et al. (U.S. Pat. Pub. No. 2004/0098448, herein Fukushima) in view of Khan et al. (U.S. Pat. Pub. 2002/0143951, herein Khan); Claims 3-5, 12, 15, and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fukushima in view of Khan and Hundscheidt et al. (U.S. Pat. Pub. 2002/0085506, herein Hundscheidt); Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Fukushima in view of Khan and O'Neill et al. (U.S. Pat. Pub. No. 2004/0047322, herein O'Neill '322); and Claims 8-10, 16 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fukushima in view of Khan and O'Neill et al. (U.S. Pat. Pub. No. 2003/0018715, herein O'Neil '715).

With regard to the rejection of Claims 1, 2, 7, 11, 13, 14, 17, and 18 under 35 U.S.C. §103(a) as unpatentable over Fukushima in view of Khan, Applicants respectfully traverse this rejection. Specifically, amended Claim 1 recites,

> A communication system <u>for forwarding a multicast packet</u>
> <u>transmitted from a source terminal to a destination terminal in</u>
> <u>accordance with predetermined forwarding paths, wherein</u>
>   <u>the forwarding paths include a plurality of multicast-</u>
> <u>capable routers and a plurality of multicast-incapable routers,</u>
>   <u>the plurality of multicast-capable routers include a non-</u>
> <u>branch router and a branch router, the non-branch router is</u>
> <u>connected to a single other multicast-capable router on the</u>

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destination terminal side, and the branch router is connected to a plurality of other multicast-capable routers including the non-branch router on the destination terminal side,

the non-branch router comprises:

a message provider configured to generate a request message requesting deletion of an address of the non-branch router and requesting registration of an address of a register target multicast-capable router connected to the destination terminal side of the non-branch router; and

a forwarder configured to forward the request message to the branch router connected to the destination terminal side of the non-branch router;

the branch router comprises:

a forwarding destination holder configured to hold a table in which each address of the plurality of other multicast-capable routers is registered;

a forwarding destination register configured to update the table by deletion of the address of the non-branch router from the table and registration of an address of the register target multicast-capable router to the table, in accordance with receiving of the request message; and

a forwarding controller configured to generate a second encapsulated multicast packet in accordance with receiving a first encapsulated multicast packet generated by setting an address of the branch router to the multicast packet, and wherein

the forwarding controller is configured to generate the second encapsulated multicast packet by re-setting an address registered in the updated table to the multicast packet derived from the first encapsulated multicast packet.

Amended Claim 11 recites a similar multicast-capable router and amended Claim 17 recites a corresponding communications method claim.

Fukushima discusses a multicast protocol processor that extracts the group address information from the control packet and sends this information and the control packet contents to the access control processor.[1] The processor also periodically sends a control packet for multicast routing protocol. Fukushima describes making a multicast-incapable router forward a multicast data packet as a normal unicast data by tunneling a multicast data packet between multicast routers.[2] This occurs when the multicast router at one end of the

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[1] *See* Fukushima ¶ 0053 & 0054.
[2] *See* Fukushima ¶ 0007.

tunnel encapsulate multicast data packet into unicast data packet and sends the encapsulated

multicast data packet, now a unicast data packet, to a multicast-capable router at the other end

of the tunnel.[3]

In contrast to <u>Fukushima</u>, Amended Claim 1 recites a non-branch router with a

forwarder configured to forward the request message to the branch router connected to the

destination terminal side of the non-branch router. Further Claim 1 recites that a branch

router updates a table by deleting an address of the non-branch router from the table and

registers an address of the register target multicast-capable router connected downstream of

the non-branch router to the table. Additionally, Claim 1 recites generating a second

encapsulated multicast packet in accordance with receiving a first encapsulated multicast

packet. Moreover, Claim 1 recites resetting an address registered in the updated table to the

multicast packet derived from the first encapsulated multicast packet.

Thus, in the claimed invention, the branch router is a router connecting a plurality of

other multicast-capable routers on the destination terminal side, for example those

downstream of the branch router. In converse to the branch router, the non-branch router is a

router connecting a single other multicast-capable router on the destination terminal side, for

example those downstream of the non-branch router. This allows an address set to the second

encapulstated multicast packet generated by the branch router instead of the address of the

non-branch router, further allowing the address of the register target multicast-capable router

connected to downstream of the non-branch router to be used.

These features at least permit the second encapsulated multicast packet generated by

the branch router to pass through the non-branch router and reach the register target

multicast-capable router connected downstream of the non-branch router. Therefore, this

provides at least the benefit of the non-branch router not having to derive the multicast packet

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[3] *Id.*

from the encapsulated multicast packet, also known as decapsulation, and reset the address to the multicast packet, also known as re-encapsulation. Because the number of multicast-capable routers which perform decapsulation and re-encapsulation decreases, it is possible to reduce the time needed to forward the multicast packet and to reduce the load on the whole communications system.

In contrast, Fukushima describes sending the encapsulated data packet between multicast-capable routers. Therefore, Fukushima does not disclose or suggest that the branch router deletes the address of the non-branch router connected downstream of the branch router or registering the address of the router connected downstream of this non-branch router to the table as recited in Claim 1. Moreover, Khan does not cure the deficiencies of the Fukushima reference with regard to the above noted features.

Accordingly, Applicants respectfully request that the rejection of Claims 1, 2, 7, 11, 13, 14, 17, and 18 under 35 U.S.C. §103(a) as unpatentable over Fukushima in view of Khan be withdrawn.

With respect to the further cited references, Applicants respectfully submit that the further cited Hundscheidt, O'Neill '322, O'Neil '715 references are not believed to overcome the above-noted deficiencies of Fukushima and Khan. Accordingly, Applicants respectfully request that the remaining rejections under 35 U.S.C. §103(a) be withdrawn.
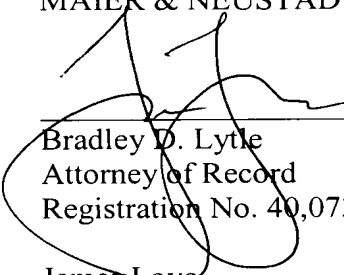
Consequently, in light of the above discussion and in view of the present

amendments, the present application is believed to be in condition for allowance. An early

and favorable action to that effect is respectfully requested.

Respectfully submitted,

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